For in the end, it is impossible to have a great life unless it is a meaningful life. And it is very difficult to have a meaningful life without meaningful work. Perhaps then you might gain the rare tranquility that comes from knowing that you’ve had a hand in creating something of intrinsic excellence that makes a contribution. Indeed you might even gain that deepest of all satisfactions knowing that your short time here on this earth has been well spent and that it mattered.

- Jim Collins
Our Core Values:

Integrity
We uphold integrity in our words and actions.

Compassion
We show compassion to every person, every time.

Service
We provide service to our patients, our co-workers, and our community.

Excellence
We demonstrate excellence every day, in every way.

Ownership
We take ownership for all we do.
...the Strength of the Pack is the Wolf
and the Strength of the Wolf is the Pack

Rudyard Kipling – The Jungle Book

Synergy: The collaboration between two or more units to produce a combined effect greater than the sum of the independent efforts.
Executive Summary
August 1, 2014 — July 31, 2015

Synergy: the interaction or collaboration between two or more organizations to produce a combined effect greater than the sum of the separate efforts.

The Neuroscience and Spine Institute of Kalispell Regional Healthcare consists of the Departments of Neurology, Neurological Surgery, Physical and Rehabilitative Medicine and the Montana Center for Wellness and Pain Management, working together to provide advanced, comprehensive, patient-centered clinical neuroscience services, education, clinical research and community service to the state and region. Our collaborative strategic priorities includes:

- distinction in talent, technologies, facilities and treatment programs
- patient-focused, integrated services
- patient access and accountability
- growth in awareness and recognition locally, regionally, and nationally
- financial accountability and cost reduction
- community service

Presented below are the synergistic efforts of the Neuroscience and Spine Institute for 2014-2015 year.

Overall, the Neuroscience and Spine Institute demonstrated a significant growth in the number, complexity, and diversity of patients treated over the past year:

- total patient increase of 22.7 percent (30,931/37,943)
- new patient growth of 11.2 percent (4,880/5,422)

- major surgical volume increased by 16 percent (520/630)
- cranial surgical volume by 12 percent (84/94)
- total diagnostic and interventional volume by 38.4 percent (3,187/4,410)

Programmatic growth and maturation was seen in Neuro-Oncology with increases in operated and case representation at Tumor Board (an overall increase of 90.5 percent (24/40) since 2011). Further growth in Neuro-Oncology is anticipated as the new Radiation Oncology Platform has come on-line. This technology will expand our ability to treat abnormalities of the brain, skull base and spine with precision radiation. Neurological Surgery expanded its inpatient presence with the addition of a dedicated mid-level neuro-hospitalist. The goal of this expansion is increased synergy between services, decreased length of stay, earlier discharges and patient dispositions within the hospital. Functional neurological surgery, led by surgeon Joseph Sramek, MD, has initiated recruitment of essential tremor patients in addition to Parkinson’s patients for treatment with deep brain stimulation. Medical Tourism continued to expand with improved access and treatment protocols.

Improving access and follow-up care, the Physical Medicine and Rehabilitation (PMR) department has opened clinics for concussion patients and back/neck pain patients. In synergy with neurological surgery these new clinics have improved access for new and follow-up concussion patients, acute back pain patients, and opened slots for surgical patients in neurological surgery. In addition to outpatient
growth in PMR there has been a concomitant growth in inpatient admissions by 59 percent (106/169) and consultations with a length of stay better than the national average.

The Save the Brain campaign has continued its maturation with more than 40 talks regarding concussion recognition and management and 100 clinicians trained for concussion management. This has led to a significant growth in concussion encounters of 54 percent (204/315).

The Department of Neurology has expanded its neurodiagnostic capabilities with the implementation of new EEG and expanded EMG/NCS services. Kalispell Regional Healthcare is one of the only facilities in Montana providing inpatient continuous 24 hour video EEG monitoring. Also unique to Neurology is the only Pediatric Neurologist in the state. Both this technology and talent will aid in the segue of KRH into a pediatric treatment center. The Telestroke program continues to grow now including seven hospitals in the network.

The Montana Center for Wellness and Pain Management continues to be one of the most comprehensive centers for the management of pain in the region offering the full spectrum of conventional treatments, interventional pain management, complementary options of acupuncture, chiropractic, biofeedback, massage, and counseling. The Montana Center works with the most difficult pain syndromes offering hope and a spectrum of effective treatment options.

A number of community service programs are offered annually. As previously mentioned the Save the Brain campaign plays an integral role in brain injury prevention and recovery. The PMR group has developed an interdisciplinary prosthetics and orthotics clinic, a gait analysis protocol, a spasticity clinic, and baclofen pump program. Neurological surgery supports a number of community services including the Dragon Boat races representing brain tumor treatment with the dragon boat Grey Matter; Flathead Community Nursing School with both lectures and Advisory Board and The Event at Rebecca Farms.

The educational endeavors of the institute continue to flourish and grow. The Neuroscience and Spine Institute provides Level One CME credits for Case Conference, Spine Conference, Imaging Conference, and Journal Club. All conferences are open to the KRH medical community. The Department of Neurological Surgery supports clinical rotations for medical students, family medicine residents, and physician assistance students. Routine educational lectures are offered to the nursing staff of the OR, ICU, medical floors, and ER. The month of April is Neuroscience Month with the Institute offering lectures at grand rounds each week covering a variety of clinically relevant neuroscience topics. This year’s 3rd Annual Mid-level Boot Camp drew 30 attendees from around the country (three year total of 88 outside attendees). The success of the boot camp has stimulated a working partnership with the University of Utah, Department of Neurological Surgery to host a winter meeting in association with its’ Annual Lende Winter Neurosurgical Conference.

The Department of Neurological Surgery has expanded with two new clinical providers. Joshua Williford, PA-C, has joined to champion the inpatient neuroscience service. Joshua serves as a mid-level neuro-hospitalist with goals of improving interface with other services, decreasing length of stay, and expediting in
patient's hospital dispositions. Joshua also participates in the comprehensive spine clinical and neurosurgery clinics. Steven Campbell, MD, will join us January 1, 2016 from Allenstown, Pennsylvania where he practiced neurological surgery for the past eight years. Steven has interests in trauma, stereotactic radiosurgery and neuro-spine. These personnel additions along with our synergistic efforts with the PMR department (concussion and comprehensive spine clinics) have led to improved patient access and decrease appointment wait times.

The Neuroscience and Spine Institute continues to mature, grow, diversify, and become more comprehensive. We are actively working on a new strategic plan having met the goals and objectives of our initial plan. We aspire to grow and serve as a regional clinical neuroscience resource in developing pediatric neurological surgery and becoming the tertiary referral center in Montana for brain tumor, deep brain stimulation, stroke, traumatic brain injury recovery, and neurophysiology. We are dedicated to the continued transformation of clinical neuroscience health care both in the state and surrounding region, providing advanced, comprehensive brain and spine care.

TC Oritigano MD, PhD, FACS, FAANS
Medical Director
Neuroscience and Spine Institute and Department of Neurological Surgery
Kalispell Regional Healthcare
Garden Wall with Fall Colors by Jack Bell
**Consolidated Productivity**

**Neuroscience and Spine Institute**

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Patients</td>
<td>30,931</td>
<td>37,943</td>
<td>22.7%</td>
</tr>
<tr>
<td>New Patients</td>
<td>4,880</td>
<td>5,422</td>
<td>11.2%</td>
</tr>
<tr>
<td>Total Procedures</td>
<td>3,187</td>
<td>4,410</td>
<td>38.4%</td>
</tr>
<tr>
<td>Major Surgical Procedures</td>
<td>520</td>
<td>603</td>
<td>16.0%</td>
</tr>
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</table>
### Neurosurgery

<table>
<thead>
<tr>
<th>Name</th>
<th>Specialty</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thomas C. Origitano, MD, PhD, FACS, FAANS</td>
<td>Neurological Surgery</td>
<td>Neuroscience and Spine Institute, Department of Neurological Surgery</td>
</tr>
<tr>
<td>Joshua Krass, DO</td>
<td>Neurological Surgery</td>
<td>Neuroscience and Spine Institute, Department of Neurological Surgery</td>
</tr>
<tr>
<td>Joseph Sramek, MD</td>
<td>Neurological Surgery</td>
<td>Neuroscience and Spine Institute, Department of Neurological Surgery</td>
</tr>
<tr>
<td>Robert Griffin, MS, PA-C</td>
<td>Neurological Surgery</td>
<td>Neuroscience and Spine Institute, Department of Neurological Surgery</td>
</tr>
<tr>
<td>Tacey Griffin, PA-C</td>
<td>Neurological Surgery</td>
<td>Neuroscience and Spine Institute, Department of Neurological Surgery</td>
</tr>
<tr>
<td>Amy Tangedahl, PA-C</td>
<td>Neurological Surgery</td>
<td>Neuroscience and Spine Institute, Department of Neurological Surgery</td>
</tr>
<tr>
<td>Joshua Williford, PA-C</td>
<td>Neurological Surgery</td>
<td>Neuroscience and Spine Institute, Department of Neurological Surgery</td>
</tr>
<tr>
<td>Robert Griffin, MS, PA-C</td>
<td>Neurological Surgery</td>
<td>Neuroscience and Spine Institute, Department of Neurological Surgery</td>
</tr>
</tbody>
</table>

**Distinction:** Cerebrovascular and skull base fellowship trained neurological surgery; nationally recognized neurosurgery in skull base, vascular and tumor surgery; functional neurosurgery performing deep brain stimulation and epilepsy surgery

**Midlevel’s role in optimizing clinical effectiveness:** access, expense, and efficiency

### Neurology

<table>
<thead>
<tr>
<th>Name</th>
<th>Specialty</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melanie Klawiter, MD</td>
<td>Neurology</td>
<td>Neuroscience and Spine Institute, Department of Neurology</td>
</tr>
<tr>
<td>Bret Lindsay, MD</td>
<td>Neurology</td>
<td>Neuroscience and Spine Institute, Department of Neurology</td>
</tr>
<tr>
<td>Kurt Lindsay, MD</td>
<td>Neurology</td>
<td>Neuroscience and Spine Institute, Department of Neurology</td>
</tr>
<tr>
<td>Robert Schimpff, MD</td>
<td>Neurology</td>
<td>Outreach Clinics</td>
</tr>
<tr>
<td>Donald Stone, MD</td>
<td>Neurology</td>
<td>Neuroscience and Spine Institute, Department of Neurology</td>
</tr>
<tr>
<td>Marcus S. Wheeler, MD</td>
<td>Neurology</td>
<td>Neuroscience and Spine Institute, Department of Neurology</td>
</tr>
<tr>
<td>Kristin Yandora, DO</td>
<td>Neurology</td>
<td>Neuroscience and Spine Institute, Department of Neurology</td>
</tr>
<tr>
<td>Paul Coats, NP</td>
<td>Neurology</td>
<td>Neuroscience and Spine Institute, Department of Neurology</td>
</tr>
</tbody>
</table>

**Distinction:** Fellowship trained cerebrovascular neurology, neurophysiology, epilepsy neurology, pediatric neurology, headache medicine, neuroimaging
Neuroscience Talent

Physical Medicine & Rehabilitation (Physiatry)

Andrew Cole, MD
Physiatry
Neuroscience and Spine Institute,
Department of Physical Medicine
and Rehabilitation

Rachel Zeider, MD
Physiatry
Neuroscience and Spine Institute,
Department of Physical Medicine
and Rehabilitation

Mikal Bailey, MPAS, PA-C
Physiatry
Neuroscience and Spine Institute,
Department of Physical Medicine
and Rehabilitation

Distinction: CARF (Certification for Rehabilitation Facilities)
accreditation including stroke

Montana Center for Wellness & Pain Management

Robert Cale, MD
Pain Management
The Montana Center for Wellness & Pain Management

Steven C. Cohen, MD
Pain Management
The Montana Center for Wellness & Pain Management

Camden Kneeland, MD
Pain Management
The Montana Center for Wellness & Pain Management

Chris Nadasí, PhD
Pain Management
The Montana Center for Wellness & Pain Management

Lon Savik, DC
Pain Management
The Montana Center for Wellness & Pain Management

Colleen Gagliardi, ND, LAc
Pain Management
The Montana Center for Wellness & Pain Management

Brenda Anderson, PA-C
Pain Management
The Montana Center for Wellness & Pain Management

Eric Belanger, PA-C
Pain Management
The Montana Center for Wellness & Pain Management

Matthew Zemake, PA-C
Pain Management
The Montana Center for Wellness & Pain Management

Tanjaritta Anttiila, LCSW, CYT
Pain Management
The Montana Center for Wellness & Pain Management
Support Staff

Neurosurgery
Linda Boehm, Coder
Chelsea Wermelskirchen, Practice Associate
Kristi Ruggles, Practice Specialist
Desiree Huston, Practice Associate
Ramona Guy, Practice Associate
Oteese Dulmage, Practice Associate
Vanessa Homer, MA
Janelle Cano, RMA
Martha Overbeek, RN
Willie Deering, Dept. Assistant
Lisa Cantu, Supervisor
Jennifer Standley, NSI Manager

Physical Medicine & Rehabilitation
Jacqueline Vigil, Practice Associate
Tiffiney Dedman, Practice Associate
Chelsea Dyer, MA
Tanita Anderson, RMA

Neurology
Jennifer Robinson, Save the Brain Coordinator
Tim Hoselton, EEG tech
Shanna Steven, EEG tech
Brittany Burns, Coder/Biller
Brittany Franklin, Practice Associate
Michelle Cuffe, Practice Associate

Montana Center for Wellness & Pain Management cont.

Distinction: A comprehensive center offering interventional pain management, physical therapy, gentle movement classes, yoga, chiropractic, massage therapy, acupuncture, naturopathic medicine, addiction medicine, and medical pain management.

Alisha Bailey, MSPT
Pain Management
The Montana Center for Wellness & Pain Management

Kelly Brewer, LC
Pain Management
The Montana Center for Wellness & Pain Management

Stephanie Cymbal, LCSW
Pain Management
The Montana Center for Wellness & Pain Management

Justin Green, LAc
Pain Management
The Montana Center for Wellness & Pain Management

Daniel Gregerson, LCPC
Pain Management
The Montana Center for Wellness & Pain Management

Diane Stephens, LMT
Pain Management
The Montana Center for Wellness & Pain Management

Jesica Moore, MA
Micheala Karren, MA
Brenda Trevino, RMA
Haley Graham, RMA
Aurelia Ramsey, CMA
Kristina Kirschenmann, RN
Chris Lindsay, RN
Sarah Hylton, Dept. Assistant
Jennifer Bullins, Office Supervisor

The Montana Center
Doreen Hart, RN
Shaunda Crutsinger, RN
Lisa Inman, Clinical Supervisor/CMA
Cherry Sovann, RMA
Trevor Wobschall, RMA
Erin Young, MA
Kim Miller, CMA
Mary McGrath, CMA
Maryann Keane, Triage Coordinator/RMA
Marie Ferda, Coder
Kacey Scott, Cert. Coder
Libby Oldynski, Check-In Clerk
Sheri Gates, Check-In Clerk
Judy Becker, Check-Out Clerk
Cathy Ferrari, Check-Out Clerk
Colleen Cluka, Clerical Supervisor
Neurological surgery constitutes the medical discipline and surgical specialty that provides care for adult and pediatric patients in the treatment of pain or pathological processes, that may modify the functions or activity of the central nervous system, the peripheral nervous system, the autonomic nervous system, the supporting structures of these systems (meninges, skull and skull base, and vertebral column), and their vascular supply.

This year the department continued to grow and mature across the spectrum of neurological surgery to offer our patients advanced and comprehensive neurosurgical care. The scope of neurological surgery includes tumor, trauma/critical care, vascular, spine and peripheral nerve function, epilepsy, and pediatrics. Growth and maturation in each area is described below.

Tumor

**Pituitary tumors**
In conjunction with our colleagues in otolaryngology, we have expanded our operative case load utilizing minimally invasive image guided endonasal endoscopic surgery. This technique utilized the combination of direct endoscopic visualization with computer assisted navigation, minimizing invasiveness while maximizing extent of resection and decreasing complication rates. This technique has also been utilized for other pathologies of the anterior skull base and clivus.

**Primary brain tumors**
The number and complexity of primary brain tumors continues to grow with 40 operative cases in this year. The neuro-oncology program continues to evolve (125 cases over 4 years) and implementation of advanced technologies including functional MRI, computer assisted image-guided navigation, and an advanced stereotactic radiosurgery/therapy platform.

**Skull base tumors**
The service includes expertise in the full spectrum of skull base approaches for complex tumors of the anterior, middle (including cavernous sinus) and posterior fossa. These advanced techniques are combined with our advanced stereotactic radiosurgery/therapies.

*The secret of success in an Institution...is to blend the old with the new, the past with the present in due proportion, and it is not difficult if we follow Emerson's counsel: 'We cannot overstate our debt to the Past, but the moment has supreme claim; the sole terms on which the past becomes ours are its subordination to the present.'*

— Sir William Osler
**Spinal oncology**
Both intradural and spinal column oncological disease processes are now routinely operated with the aid of intraoperative neurophysiological monitoring, and intraoperative image acquisition for spinal column stabilization and deformity correction.

**Tumor board**
All neurological cases are formally presented at the Kalispell Regional Healthcare systems weekly multidisciplinary cancer conference/tumor board.

**Radiation oncology**
Stereotactic radiosurgery and radiation therapy are performed utilizing the advanced varian true beam system. The true beam system is a fully integrated image-guided system that can treat tumors of the brain, skull base, and spinal column.

**Trauma/critical care**
The neurosurgical service fully supports and participates in the trauma mission of the health center. This collaboration includes the trauma/acute care surgeons, emergency room physicians and intensivists/hospitalist services. In the recent re-accreditation of the trauma status, neurosurgical support was noted as one of the strengths of the application. Neurosurgical trauma coverage includes both cranial and spinal traumatic injuries. The neurosurgical service also provides emergency care for ischemic and hemorrhagic stroke, concussions, chronic subdural collections, and hydrocephalus. Critical care management of patients is a collaborative effort between the attending neurological surgeon and intensivist while patients are in the ICU. The hospitalist service provides advanced medical care, medically complex neurosurgical patients during their hospital course. A dedicated neuro-hospital physician assistant provides daily rounding and continuity of care during the course of hospitalization.

**Vascular**
The neurosurgical services provides medical management and operative intervention for intracranial hemorrhage, cavernous malformations, unruptured intracranial aneurysm, and hemi-craniotomy for malignant middle cerebral artery stroke. We are the surgical back-up for the Department of Neurology’s multi-hospital stroke program. In addition to open surgical management of arteriovenous malformations, our new radiosurgery platform allows for a stereotactic radiosurgical options.

**Spine/peripherieal nerve**
The service offers a full spectrum of open and minimally invasive approaches to all levels of the spine (cervical, thoracic, lumbar, sacral), for degenerative, infectious, traumatic, neoplastic and congenital pathologies of the spinal column. Intraoperative image acquisition and guidance are available for complex spinal reconstruction and deformity cases. The service also provides

---

**Trauma / Critical Care**

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
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<tbody>
<tr>
<td>Total trauma activations</td>
<td>241</td>
<td>239</td>
</tr>
<tr>
<td>Direct neurological surgery trauma admits</td>
<td>52</td>
<td>76</td>
</tr>
<tr>
<td>Neurological surgery trauma consults</td>
<td>75</td>
<td>48</td>
</tr>
<tr>
<td>Total (in percent)*</td>
<td>53</td>
<td>52</td>
</tr>
</tbody>
</table>

* Does not include non-activations, non-traumatic neurological emergencies (chronic subdural, stroke, intracranial hemorrhage, hydrocephalus)
surgical management of entrapment neuropathies and traumatic nerve transections. Significant growth in the number and complexity of both spinal and peripheral nerve cases continues this past year. This program is collaborative between Neurology, Physical and Rehabilitation Medicine, and The Montana Center for Wellness and Pain Management. The department also offers in-office injection interventions for myofascial pathologies, for both diagnostic and therapeutic modalities.

Functional
The department offers a deep brain stimulation program for both Parkinson’s disease and essential tremor. This program is a collaboration between Neurological Surgery and the Neurology Department. Other functional interventions include:
• vagal nerve stimulation
• spinal cord stimulation
• intrathecal pain pumps
• microvascular decompression for trigeminal neuralgia

Pediatrics
The department provides emergency care and stabilization of pediatric patients of all ages.

Patients 12 years and older are generally managed on campus, for both emergency and elective interventions. Younger patients with complex pediatric dilemmas are managed through a cooperative arrangement and transferred to Seattle Children’s Hospital. Every effort is made to manage post-intervention follow-up on-site by electronic data and imaging exchange with Seattle Children’s, to minimize the need for out-of-state travel.

The Department of Neurological Surgery is dedicated to expanding its pediatric capacity and is actively participating in the health system pediatric expansion with recruitment of a full time pediatric neurosurgeon.

Medical tourism
The department offers consultative and operative services for international and out-of-state patients through the international medical services of Kalispell Regional Healthcare.

General considerations
The department is advantaged for optimal outcomes with a number of technological and personnel resources:
• dedicated neurosurgical operating room team
• critical care specialists
• hospitalist service
• dedicated neuro-hospitalist mid-level provider
• intraoperative image guided technologies
• intraoperative 3D spinal image acquisition and navigation
• neurophysiological monitoring and evaluation
• 3T MRI with functional imaging
• intraoperative angiography
• intraoperative ultrasound and ultrasonic aspirators
• on-site inpatient rehabilitation facility
• fixed wing and aero-medical transport

Educational endeavours
The department offers educational rotations for medical students, physician assistant students and family medicine residents. The department runs an ongoing weekly continuing medical educational program for level one credits consisting of case conference, journal club, special topics review and spine conference. This year’s educational events included a conference dedicated to concussion and mild traumatic brain injury related to sports injuries, a presentation on the brain tumor program to the national advisory council, four dedicated lectures on neuroscience topics for Kalispell Regional Medical Center, April grand rounds, and the 3rd Annual Neurosurgical Boot Camp for mid-level providers.

The culmination of our educational efforts came with the presentation and acceptance of a proposal to start a fellowship in neurological surgery for physician assistants. This exciting program will provide advanced training for mid-level providers who are interested in focusing their careers in neurological surgery. The initial fellow will start training in January of 2016.

Conclusion
Kalispell Regional Healthcare’s Department of Neurological Surgery, continues to strive to provide comprehensive and advanced neurosurgical care for Montana, in Montana and to the region. We are dedicated to providing tertiary care to the people of the Flathead Valley, thereby decreasing the need for out-of-state travel. It has been our privilege to collaborate with the other departments and centers in the Neuroscience and Spine Institute to provide service to the people and guests of Montana. We are grateful to the senior administration and board of directors for providing us with the technology, talent and facilities that make our efforts possible.

Representing the Department of Neurological Surgery

TC Origitano, MD, PhD
Physical Medicine & Rehabilitation
Executive Summary

The Physical Medicine and Rehabilitation department has continued to grow over the past year. Program development endeavors include ongoing medical directorship of the multi-disciplinary Save The Brain campaign. Overall there have been more than 40 talks regarding concussion recognition and management, more than 100 clinicians have been trained in concussion management, and Save The Brain board members have been asked to join the governor’s board for brain injury and the Brain Injury Alliance of Montana. In addition, we have had more than 70 new patient referrals for concussion management in the PM&R concussion clinic since it began earlier this year.

We have implemented a Comprehensive Spine Clinic to increase access to care and more efficiently use the available resources in the Neuroscience and Spine Institute. This is a joint venture between PM&R and Neurosurgery but is based out of the PM&R clinic. Since beginning the clinic in March of this year, we have been able to see 169 new patients in Spine Clinic alone. As part of this endeavor over the next year we hope to broaden our scope, providing multidisciplinary care for adolescents with idiopathic scoliosis in addition to management of spine pain.

To further serve the community, we have worked to develop an interdisciplinary prosthetics and orthotics clinic. This is attended by the patient, orthotist, prosthetist, physical therapist, physician assistant, and physician. We are able to discuss difficult issues related to prosthetic and orthotic needs and address the patient’s questions from a team approach. This improves access for patients who live far away and allow the team to come up with a comprehensive treatment plan within a single visit.

Other endeavors include working with Neurosurgery to develop protocols to more effectively evaluate patients for cranial shunts and baclofen pumps, increasing accessibility for spasticity management with Botox injections, and increasing the number of musculoskeletal injections available in the office with the use of ultrasound for guidance. In inpatient rehab the number of admissions increased by almost 60 percent over the prior year and our average length of stay is one day under the national average. We have increased accessibility for consults with more than 300 consults done in the past year.

Andrew Cole, MD
Rachel Zeider, MD
## Inpatient Rehabilitation Summary

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Stroke</td>
<td>29.1%</td>
<td>21.8%</td>
<td>22.7%</td>
</tr>
<tr>
<td>Brain injury</td>
<td>24.0%</td>
<td>13.8%</td>
<td>10.2%</td>
</tr>
<tr>
<td>Multi-trauma/Ortho</td>
<td>20.4%</td>
<td>30.5%</td>
<td>28.2%</td>
</tr>
<tr>
<td>Spinal cord injury</td>
<td>7.2%</td>
<td>7.2%</td>
<td>5.9%</td>
</tr>
<tr>
<td>Neurological</td>
<td>8.4%</td>
<td>7.7%</td>
<td>12.4%</td>
</tr>
<tr>
<td>Cardiac</td>
<td>3.6%</td>
<td>2.5%</td>
<td>4.1%</td>
</tr>
<tr>
<td>Other</td>
<td>6.5%</td>
<td>16.5%</td>
<td>16.5%</td>
</tr>
</tbody>
</table>

**Metric**
- **Average daily census**: 4.1, 5.7, 4.4
- **Average monthly admissions**: 8.0, 14.3, 12.0
- **Average monthly referrals**: 16.3, 29.0, 25.0
# Neurological Surgery and Physical Medicine & Rehabilitation Summary

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Total Visits</td>
<td>3,772</td>
<td>5,322</td>
<td>6,338</td>
<td>19.0%</td>
</tr>
<tr>
<td>New Patients</td>
<td>1,120</td>
<td>1,514</td>
<td>1,557</td>
<td>4.2%</td>
</tr>
<tr>
<td>Major Procedures</td>
<td>373</td>
<td>520</td>
<td>630</td>
<td>16.0%</td>
</tr>
<tr>
<td>Office Procedures</td>
<td>0</td>
<td>154</td>
<td>285</td>
<td>85.0%</td>
</tr>
<tr>
<td>Total Procedures</td>
<td>373</td>
<td>674</td>
<td>915</td>
<td>36.0%</td>
</tr>
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</table>
The year 2015 has been a welcome year of dramatic change for the Neurology Department within the Neuroscience and Spine Institute. Through extensive collaboration with our Neuroscience colleagues coupled with the motivated and able support of our Administration we have realized substantive advancements in our ability to deliver high quality care to our patients with neurologic disease. Of particular significance this year are the improvements in our Electroencephalography (EEG) services, the enhanced implementation of telemedicine technologies, and, recent structural and methodologic changes which have lead to improved patient access to neurologic care.

The recent acquisition of three integrated advanced EEG units has allowed us to now provide twenty-four hour, continuous, video-enhanced EEG monitoring in the inpatient setting. This system has also improved the quality of outpatient EEG services as well and will allow us to interpret EEG studies from surrounding communities remotely. We currently have two EEG technologists who provide around-the-clock support for our critically ill inpatients. We hope to add a third EEG technologist within the next year to keep pace with the ever-increasing volume of EEG studies which has nearly doubled in the past year.

The neurologists at KRMC have provided the only spoke-hub model telestroke consultative service in Montana since its inception in 2007. This was the first acute telemedicine service of any kind in Montana and allowed us to provide emergent neurologic consultations...
to Emergency Department physicians in several rural hospitals. Within the last year our telestroke service was awarded a large Federal grant to expand our original three participating telestroke hospitals to seven hospitals as of 2015 and to ten participating rural hospitals by 2016. Additionally, our providers have recently embarked on a pilot study to evaluate the utility of nonacute telemedicine clinics in a rural setting. We anticipate this will likely lead to more widespread utilization of this emerging technology in the near future.

Improving access to neurologic care for our patients and referring providers has been an ongoing concern of the Neurology Department. Currently our providers travel to ten outlying rural communities each month for outpatient neurology “Outreach” clinics. Increasingly, we suspect that telemedicine modalities will help us to provide more efficient and timely outreach services to our surrounding communities. Locally, our outpatient clinic building is currently undergoing an extensive structural remodel to accommodate a new care delivery model that we anticipate will improve the quality, efficiency and timeliness of neurologic care for our patients. Over the past year, our total number of outpatient neurology clinic visits has increased by twenty-five percent without the acquisition of additional providers.

Lastly, we look forward to continuing our collaborative role in previously established multidisciplinary Neuroscience entities. Among these are, the Movement Disorders Clinic with our Neurosurgery Department, the Neuroimaging Conference with our Neuroradiology and Neurosurgery Departments, and the Save the Brain campaign with our Physical Medicine and Rehabilitation department. We are inspired by our patients with neurologic disease, by our Neuroscience colleagues and by our thoughtful and motivated Administration. We aspire collectively to provide the best possible care for our patients now and into the future.

Bret Lindsay, MD

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<td>3,432</td>
<td>7,736</td>
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<td>New patients</td>
<td>863</td>
<td>1,858</td>
<td>1,885</td>
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<tr>
<td>Total diagnostics &amp; office procedures</td>
<td>856</td>
<td>1,295</td>
<td>1,954</td>
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</table>
The KRH TeleStroke program continues to grow and provide advanced stroke care to critical access hospitals and the communities they serve throughout northwest Montana. Started in 2010, with help from state tobacco settlement funds to place TeleMedicine Robots in Libby, Ronan and Plains, our local team of neurologists are able to utilize secure audiovisual technology to join rural hospital providers in real-time consultation with acute stroke patients, dramatically improving care and increasing intravenous tissue plasminogen activator (IV tPA) usage – a time sensitive, potentially life-saving medication for acute stroke. In 2014, the KRH TeleStroke program was able to secure a large USDA distance learning and telemedicine grant which allowed for the expansion of four new sites (Whitefish, Cutbank, Shelby, and Conrad). Additionally, within the next year three more sites will be added, bringing the KRH TeleStroke network to a total of 10 rural critical access hospitals.

Thus far in 2015, our acute stroke consultations have risen more than 300 percent from 2010 and more than 100 percent from the total in 2014. Moreover, with thoughtful collaboration between expert KRH neurologists and remote, rural acute care providers, IV tPA has been utilized 15 times – often with dramatic improvement in symptoms. Most of these rural hospitals had never utilized this life-changing medication prior to their involvement in this program.

In addition to acute stroke care improvements described above, the TeleStroke sites have benefited from extensive education programs directed both towards providers and nursing services. These seminars and lectures, provided both in person and via teleconferencing, have significantly raised the bar for stroke treatment in these rural hospitals across the spectrum of care from emergency medical assessment to inpatient management to improving access to dedicated rehab services.
The Montana Center for Wellness and Pain Management

Flathead Lake Sunrise by Jack Bell
The past year has been an exciting period of growth and change for The Montana Center for Wellness and Pain Management. We have added a new physician, Steve Cohen, MD, a new physical therapist, Alisha Bailey, PT, and a new naturopath, Colleen Gagliardi, ND, to our already extensive group of pain management and wellness specialists.

In an effort to help even more patients improve their wellness and chronic pain, we’ve expanded our services to Polson, where we have interventional and medical specialists as well as a naturopathic specialist available to serve patients.

Our medical director, N. Camden Kneeland, MD, made regional news this year as a result of his work with the Montana Medical Association to develop and launch the Know Your Dose initiative. Consistent with the philosophy of The Montana Center for Wellness and Pain Management, this program aims to educate everyone about the risks of prescription drug misuse, abuse, and addiction. We pride ourselves in our ability to offer comprehensive interdisciplinary treatment plans that minimize or eliminate the use of these medications.

We have grown steadily since the founding of our center in 2010. In the past year our traditional and complementary therapies and interventional procedures have grown by 21 percent overall.

With nine different specialties at our center dedicated to providing the best possible care, we are proud to be one of the most comprehensive interdisciplinary chronic pain management centers in the United States. The specialties listed below are utilized at The Montana Center for Wellness and Pain Management to create personalized care plans for each patient.

**Interventional pain procedures**
Dr. Kneeland’s extensive training and experience, helps tailor surgical and injection techniques that accurately apply chemicals, electricity, heat, or cold to alleviate pain. Virtually any pain condition can be treated with these techniques.

**Medical pain management**
Expert management of medications, used to maximize quality of life and minimize risk. The goal is to minimize the use of addictive and dangerous medications while seeking the best personalized treatment plan for the patient.

**Physical therapy**
Individualized treatment plans are created to improve strength and flexibility for the most
effective chronic pain relief. Home exercise programs are often established so the patient can continue to use the treatment for long term benefits.

**Chiropractic**
Our chiropractor uses his extensive experience to improve joint mobility, increase joint stability, and ultimately remove any irritation to the nervous system around the involved joint. Several different adjusting techniques and soft tissue treatments are used to accomplish this goal.

**Mental and behavioral health**
Regardless of the source of pain, it is all processed in the brain. Our expert mental health staff creates an environment in which individual and group therapies, support groups, classes, hypnotherapy, and other techniques are utilized to give our patients as many tools as possible to manage their pain and reduce their suffering. Our mental health specialists also treat conditions such as depression, anxiety, and addiction.

**Massage therapy**
Massage is a powerful ally in the pain management regimen. It can often ease the negative effects of several chronic conditions by improving range of motion, increasing joint flexibility, improving circulation, reducing fatigue and enhancing sleep quality.

**Acupuncture**
Acupuncture promotes healing by enhancing immunity and strengthens recuperative powers to benefit emotional and physical health. It has been proven to be an effective form of treatment for hundreds of painful conditions.

**Naturopathic medicine**
This specialty focuses on the use of natural therapies combined with lifestyle education to enhance the body's ability to combat illness. Many patients find this to be an extremely effective way to treat a variety of illnesses including food allergies, cancer, pain, depression, hormonal imbalances, and much more.

N. Camden Kneeland, MD

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<tr>
<td>Traditional therapy visits, less new patients</td>
<td>13,342</td>
<td>10,137</td>
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<td>Complementary therapy new patient visits</td>
<td>538</td>
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<td>878</td>
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<tr>
<td>Total activity</td>
<td>20,835</td>
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<td>23.1%</td>
</tr>
</tbody>
</table>

* Traditional therapies include medical management, mental & behavioral health, and physical therapy.

* Complementary therapies include acupuncture, massage, chiropractic, and naturopathic medicine.
Montana attorney general announces prescription drug abuse program
KRH hosts unveiling of Know Your Dose website on July 30, 2015

Dr. Camden Kneeland welcomed Montana Attorney General Tim Fox to Kalispell Thursday, July 30, to launch an online prescription drug abuse reduction resource center, Know Your Dose.

Representatives from the Montana Medical Association (MMA) and state Department of Justice were on hand for a press conference at Kalispell Regional Healthcare’s Montana Center for Wellness and Pain Management, where Dr. Kneeland directs a comprehensive program that includes treatment of chronic pain.

During the discussion, Dr. Kneeland shared his perspective on the prescription drug epidemic in the Flathead. Attorney General Fox and Dr. Bill Gallea of Helena gave an overview of the problem statewide and an introduction to newly accessible resources. The MMA provided a look at the new Know Your Dose website, which is designed to build awareness of the public health crisis facing Montana and offers a one-stop resource for health-care providers, patients dealing with chronic non-cancer pain, and the general public. It can be found at www.knowyourdosemt.com.

“Prescription drug addiction affects people from every walk of life in our state,” said Attorney General Fox. “My office was proud to partner in the development of this important new resource for providers, patients, and the public. The Know Your Dose website will improve doctor-patient communication on the efficacy and proper use of these substances, help those currently abusing prescription medications get the treatment they need, and encourage our communities to actively combat prescription drug addiction.”

“Patients suffering from chronic pain need access to physician care and our primary care physicians are providing compassionate care now for these complex cases,” Dr. Kneeland said. “We need to support these physicians.”

The website, www.knowyourdosemt.com, includes:

• Provider toolkit: patient education, treatment protocols, policies, continuing medical education
• Patient portal: pain management resources, treatment resources, FAQs, storage and disposal
• Public alerts: statistics, helpful resources, news and events, how to donate
Health professionals, law enforcement and others unveiled a new health initiative Thursday afternoon at The Montana Center for Wellness and Pain Management.

The initiative, Know Your Dose, seeks to reduce the problem of prescription drug abuse in Montana. Dr. Camden Kneeland, the medical director of the center and one of the Western Montana doctors leading the project, said the issue is a pressing one no one seems to be noticing.

“I tell people about the statistics from prescription drugs and they just can’t believe me,” he said. “Statistics like in Montana, more people die from overdose from these drugs than die from car wrecks. This is a multibillion-dollar problem in America.”

Prescription opiates cause 15 times more deaths than cocaine, heroin and methamphetamine combined, said Dr. Bill Gallea, another expert behind the initiative.

To help fight what Gallea and others have described as an epidemic, the Montana Medical Association and Montana Attorney General’s Office have teamed up for www.KnowYourDoseMT.com, an all-purpose informational website on prescription opiate addiction.

Montana Attorney General Tim Fox was in Kalispell to describe the website and how useful it could be.

“We were down in Florence earlier today and went to a pharmacy there,” Fox said. “They had a drop box for prescription drugs and he said since he had it installed in January, he had destroyed 35 pounds of prescription drugs.”

“The sheer excess of prescription drugs — particularly dangerous opiates that may not be as effective as previously believed in pain management — is another huge beast to slay,” Kneeland said.

“I go give speeches and ask people how many have had surgery. Most raise their hands,” he said. “I ask how many were prescribed 30 tabs of [a commonly prescribed opioid]. Like 80 percent of hands are up. I then ask how many used less than half. Nearly all the hands are still up.”

According to the Montana Department of Justice, 70 percent of people who abuse prescription drugs get them either free or at a small charge from a friend or family member.

Kaelyn Kelly, the Department of Justice’s drug abuse prevention coordinator, said the Know Your Dose website will inform providers and patients of these dangers.

“Providers want to be on the cutting edge,” she said. “This is a premiere tool with a huge amalgamation of information. Most providers will want to use this to not get left behind.”

Information on the site includes drug-seeking red flags, dangers of prescription drug abuse and resources for loved ones who are under the thumb of abused pharmaceuticals. And as cliche as it may be, Gallea said these drugs are gateway drugs.

“It’s something like 75 percent of new heroin users start when they can’t get the prescription opiates,” he said.

More information can be found at www.KnowYourDoseMT.com.
Awareness, Recognition, and Community Service

Medical Tourism

Grey Matter Dragon Boat

SAVE THE BRAIN
Concussion Prevention/Management

NEUROLOGICAL SURGERY
Clinical Research and Education

Boot Camp for Mid-levels

Boot Camp for Mid-levels
Neurological Consequences of Sport Related Injuries

A Concussion Workshop & Dinner
Buffalo Hill Conference Center
Kalispell Regional Medical Center

August 7, 2014

6:00 p.m. Welcome and Dinner (Velinda Stevens, President/CEO)
6:30 p.m. Sports Greatest Hits (TC Origitano, MD, PhD)
6:40 p.m. The Dylan Steiger’s Act: It is the Law (Tammi Fisher, JD)
6:50 p.m. Save The Brain Campaign (Paul Coats, FNP)
7:10 p.m. Symptom Variability in Concussion (Andrew Cole, MD, MS)
7:30 p.m. Imaging TBI (Bret Lindsay, MD)
7:45 p.m. Memory (Edward Trontel, PhD)
8:00 p.m. Return to Learning Protocol (Denise Davies, OTR)
8:15 p.m. A Chiropractic View (Tye Leduc, DC)
8:30 p.m. Concussion Case Conference:
          Q&A with Audience
          Panel Discussion
Save the Brain Campaign

The Save the Brain concussion campaign is an initiative launched by the Neuroscience and Spine Institute in August 2014 with the goal of creating a cohesive and coherent sports concussion evaluation and treatment paradigm for the greater Flathead region and beyond.

The campaign features 22 “Titans” (expert representatives) from a variety of disciplines and domains who meet to review the best neuroscience, sports and education data. From these discussions, evidence-based consensus statements regarding concussion management have been generated and are routinely updated.

Save the Brain currently provides education, trainings, tools, expert support and a website to promote quality concussion awareness and care in the community.

Seven Flathead Valley communities plus Eureka have fully embraced and deployed Save the Brain knowledge and materials.

There is great interest in promulgating the Save the Brain campaign throughout the great state of Montana. There is also a fledgling relationship forming with the University of Montana regarding collaborative research on concussion.

Educational events
- Training sessions, resulting in 253 clinicians trained in concussion management
- Informational presentations to non-clinician groups
- Large community organizational meeting – which was a pilot for launching the campaign to communities state-wide

Strategic planning events
- Montana State Legislature
- Governor’s Traumatic Brain Injury Advisory Council
- University of Montana Neural Injury Center

Media events
- Radio articles
- Healthlink articles
- Whitefish Pilot article
- Radio advertisements
- Booth presentations at health events
- Flags, stickers, swag

Tools and resource documents
- General information
- Consensus statements
- Evaluation tools
- Recovery tools
- Website

Trained Champions and Community Members August 1, 2014 – September 30, 2015

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Save the Brain
Combating the effects of concussion injuries

The Save the Brain concussion campaign was officially launched a year ago by a group of sports, medical and neuroscience professionals.

In that time, Save the Brain has made steady progress in raising public awareness and improved the way that concussions are evaluated and treated in the northern Montana region. Now the whole state is showing interest in coming on board.

"Each group and each community is different and has unique needs, so we adapt to those needs," said Paul Coats, a nurse practitioner with the Neuroscience and Spine Institute who is a leader in the Save the Brain effort campaign.

Coats said more than 100 clinicians in seven different communities have been trained in techniques to recognize and appropriately treat people who show signs of concussion.

More than 30 talks have been presented to service groups, sports boards, the general public, sports teams and schools, both in small classrooms and student assemblies. A website has been launched and is updated as new information and resources become available.

The Save the Brain network, which includes the Kalispell Regional Healthcare Trauma Committee, distributed more than 500 bike helmets this spring to children and adults in the Flathead Valley. The helmets were donated by Flathead Electric Cooperative using Round-up For Safety dollars.

See BRAIN on Page 4
Paul Coates, a nurse practitioner with the Neuroscience and Spine Institute in Kalispell, is a local leader in the Save the Brain effort campaign. The Governor’s Traumatic Brain Injury Advisory Council is looking to spread the Save the Brain campaign throughout the whole state of Montana. Coates is hoping that this will become a national program.

BRAIN Continued from Page 3

Through The Summit Medical Fitness Center, more than 400 computerized cognitive baseline tests and 300 computerized balance baseline tests have been conducted. Using a combination of professional and volunteer help, non-computerized cognitive and balance baseline tests have been administered for more than 100 hockey players, skiers, horseback riders, lacrosse players and other athletes who are at high risk for concussions.

The Save the Brain Campaign has distributed tools and training to in the greater Flathead Valley and in Eureka. The tools include pocket “Sideline Concussion Recognition” cards, which are available to everyone, as well as special forms for parents and coaches, concussion assessment tools for licensed healthcare providers, return to play forms, and more.

April Terry is posed with the Biodex machine. She administers a balance test with this apparatus.

Several local high schools, several healthcare offices and The Summit Medical Fitness Center are currently offering computerized baseline cognitive functioning tests for athletes.

A concussion is a brain injury that alters the way the brain functions. When a concussion is recognized and treated appropriately, the effects are usually temporary and symptoms are much improved within 7 to 10 days. If a concussion is not detected or not treated appropriately, effects can be longer lasting. The chances of more injury, especially a second concussion, increase dramatically.

The National Center for Biotechnology Information estimates that 300,000 sports-related traumatic brain injuries, predominately concussions, occur annually in the United States. Sports are second only to motor vehicle crashes as the leading cause of traumatic brain injury among people aged 15 to 24 years.

Montana ranks second in the nation in per capita traumatic brain injury deaths. The two highest risk groups for traumatic brain injuries are babies (0 to
BRAIN Continued from Page 4

4 years old) and teens (15 to 19 years old). Concussions are by far the most common form of traumatic brain injury.

The Save the Brain campaign was inspired by a combination of factors. Most important were the stories from parents and students who had suffered a concussion that had gone undiagnosed or been inappropriately managed. These individuals had seen their lives negatively impacted in devastating ways.

The overall objective of the Save the Brain campaign is to create a cohesive and coherent system for evaluating and managing sports concussions in Northwest Montana. The primary objectives are:

- Train medical providers throughout the region using consistent standards
- Develop relationships with local schools, sports teams and providers
- Initiate training programs with educators and schools
- Create public awareness on concussion identification and treatment.

The campaign sets standard guidelines for coaches, healthcare professionals and educators to use when dealing with concussions, and seeks to improve the way that concussions are evaluated and treated in the northern Montana region.

Clinicians involved with the Save the Brain campaign have worked with various high schools and sports groups in the region to improve awareness and treatment of concussions.

Since the initiative was launched, the Save the Brain campaign has helped improve the culture related to concussions in meaningful ways. Now the Governor’s Traumatic Brain Injury Advisory Council is looking to spread the Save the Brain campaign throughout the whole state of Montana.

The Save the Brain campaign has been nominated for the Innovation in Health Care Award, presented by the Montana Hospital Association.

For more information on Save the Brain, call the Department of Physical Medicine and Rehabilitation at 758-7035 or visit the Kalispell Regional Healthcare web site at kalispellregional.org. The site includes a variety of tools for concussion diagnosis and treatment.
Andrea Call and Kelsey Timothy both know what it is like to be diagnosed with aggressive brain tumors. Yet they coped with grit and grace. These Flathead Valley women were diagnosed – Andrea in November 2011 and Kelsey in February 2012 – with glioblastoma multiforme. Median survival hovers at 18-24 months, so both women already beat the odds.

Andrea’s treatments and impaired motor skills laid her low many days, but she has three big reasons to stay strong – her two teenagers and her husband. Despite the challenges, she feels fortunate. “I’ve had successes in my career, I have two incredible kids and I’ve been married for 27 years. I’ve had a pretty full life.”

Kelsey was planning her future with the love of her life when her diagnosis put it all on hold. But it didn’t rob her spirit. She got back into activities she loved and returned to her barista job. “It must be working. I’m 2 ½ years out,” she said.

“I decided I’m going to live forever, even if I’m on chemo the rest of my life.”

Their neurological surgeon, Dr. T.C. Origitano, knows how courageous these survivors are. “Courage is not just running toward the guns” he said. “Courage is planning your life so it’s normal for those around you.”

You can learn more about neurological surgery at Neuroscience and Spine Institute at 752-5170.
2015 Monthly Educational Program Schedule of Events

Neuroradiology Imaging
KRMC Cath Lab Conference Room | Bret Lindsay, MD
Wednesday September 2, 2015 @ 7:00 a.m.

Spine Conference
KRMC Cath Lab Conference Room | T.C. Origitano, MD, PhD
Thursday, September 3, 2015 @ 7:00 a.m.

Neurosurgical Interventions
Department of Neurological Surgery | T.C. Origitano, MD, PhD
Wednesday, September 9, 2015 @ 7:30 a.m.

Journal Club
Department of Neurological Surgery | T.C. Origitano, MD, PhD
Wednesday, September 16, 2015 @ 8:30 a.m.

Neurosurgical Interventions
Department of Neurological Surgery | T.C. Origitano, MD, PhD
Wednesday, September 23, 2015 @ 7:30 a.m.

Neurosurgical Interventions
Department of Neurological Surgery | T.C. Origitano, MD, PhD
Wednesday, September 30, 2015 @ 7:30 a.m.

OBJECTIVES
- State the natural history, evidence-based treatment paradigms, and outcomes for patients with neurological disorders.
- Describe the molecular and physiological basis of clinical neuroscience pathology and treatment.
- Demonstrate a basic knowledge of the application of neuroimaging modalities, their capacities, capabilities, and limitations in the management of disorders of the nervous system.
- Discuss treatment options, including available clinical trials.
- Formulate treatment plans in the council of experienced practitioners and evidence-based literature that exceeds national quality standards.
- Utilize clinical practice guidelines and evidence-based research to manage and optimize medical and surgical treatment of clinical neuroscience disorders.
- Analyze outcomes and recommend appropriate follow up care.

Kalispell Regional Medical Center is affiliated with the University of Washington School of Medicine.

The University of Washington School of Medicine is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

The University of Washington School of Medicine designates this live activity for a maximum of 63.0 AMA PRA Category 1 Credit(s)™. Physicians should claim only the credit commensurate with the extent of their participation in the activity. (Each session is 1.0 credit)
Kalispell Regional Healthcare

CME Noon Conference Series
April 2015

Find the calendar online at kalispellregional.org

April 6 – Monday – 12:15 p.m. – 1 hr
Buffalo Hill Conference Center

Title and Speaker
Practical Spine: Overview of patient management strategies
Thomas Origitano, MD, PhD, Neurosurgery, Neuroscience and Spine Institute, Kalispell Regional Medical Center, Kalispell, MT and
Joseph Sramek, MD, Neurosurgery, Neuroscience and Spine Institute, Kalispell Regional Medical Center, Kalispell, MT and
Joshua Krass, DO, Neurosurgery, Neuroscience and Spine Institute, Kalispell Regional Medical Center, Kalispell, MT

Objectives:
- Review the training of a neurosurgical spine surgeon.
- Discuss cervical myelopathy assessment and management.
- Explain management strategies for low back pain.
- Discuss implications of spinal fractures for the oncology patient.

April 13 – Monday – 12:15 p.m. – 1 hr
Buffalo Hill Conference Center

Title and Speaker
New and Exciting Program: Radiosurgery
Kendra Harris, MD, Radiation Oncology, NW Montana Radiation Oncology, Kalispell Regional Medical Center, Kalispell, MT
Joshua Krass, DO, Neurosurgery, Neuroscience and Spine Institute, Kalispell Regional Medical Center, Kalispell, MT

Objectives:
- Describe stereotactic radiosurgery (SRS).
- List management considerations for patients who are candidates for SRS.
- Explain the logistics, risk and benefits of this treatment modality.

April 20 – Monday – 12:15 p.m. – 1 hr
Buffalo Hill Conference Center

Title and Speaker
Loosen Up: Topics in spasticity management
Andrew Cole, MD, Physical Medicine and Rehabilitation and
Rachel Zeider, MD, Physical Medicine and Rehabilitation, Neuroscience and Spine Institute, Kalispell Regional Medical Center, Kalispell, MT

Objectives:
- Recognize spasticity (increased tone).
- Identify ways to treat increased tone including oral medications, injectable medications, implantable devices, therapeutic interventions, and surgical interventions.
- Describe the population of patients that are most susceptible to acquiring spasticity.

April 27 – Monday – 12:15pm – 1hr
Buffalo Hill Conference Center

Title and Speaker
Neurological Consequences of Sports Related Injuries: concussions and spinal cord injuries
Thomas Origitano, MD, PhD, Neurosurgery, Neuroscience and Spine Institute, Kalispell Regional Medical Center, Kalispell, MT

Objectives:
- Explain the importance of concussion assessment for student athletes and participants of recreational activities.
- Describe the pathophysiology of concussion injury and potential long-term complications.

Kalispell Regional Medical Center is affiliated with University of Washington School of Medicine.

The University of Washington School of Medicine is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

The University of Washington School of Medicine designates this educational activity for maximum of 42.0 AMA PRA Category 1 Credits™. Physicians should only claim credit commensurate with the extent of their participation in the activity.

This Live series activity, CME Noon Conference Series, from 01/05/2015 - 12/21/2015, has been reviewed and is acceptable for up to 42.0 Prescribed credit(s) by the American Academy of Family Physicians. Physicians should claim only the credit commensurate with the extent of their participation in the activity.
Patients with conditions such as Parkinson’s disease and benign essential tremor used to resign themselves to a lifetime of shaking that seriously impacted their daily activities. Today, these patients can find new hope at Kalispell Regional Healthcare.

Deep brain stimulation procedures using electrodes and tiny wires can restore a sense of normal life for these patients.

Neurological Surgeon Joseph Sramek, MD, of the KRH Neuroscience and Spine Institute, has been performing deep brain stimulation (DBS) for 18 years, the last two in Kalispell. He has seen profoundly changed lives.

“Ten years out from surgery, among patients being studied, the results still look very good,” Sramek said of the DBS outcomes for controlling tremors and Parkinson’s. Although the Food and Drug Administration approval in the United States currently is limited to these two conditions, Sramek reported that a great deal of research is being done on other conditions. “As indications expand, we will be able to provide procedures for these other conditions as well.”

Doctors from neurology and neurological surgery collaborate to evaluate and manage these patients. Typically Neurologist Bret Lindsay, MD, will take charge of patients while their conditions still can be managed medically. When the patient becomes a candidate for surgery, Dr. Sramek can provide the surgical treatment.

Parkinson’s patients have a window of opportunity when surgical treatment is considered.

“Early on in the disease, medication works very well,” Sramek said. “Five to 10 years into the disease, the medications still work, but they become less effective and often have side effects such as dyskinesias (involuntary muscle movement and diminished voluntary movement). It’s at that point the patient may be a good candidate for DBS. We want to act not too early, and not too late.”
Reverification Site Visit  
Level III Trauma Center

<table>
<thead>
<tr>
<th>Name of Facility</th>
<th>Kalispell Regional Medical Center</th>
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<tr>
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<td>Kalispell, Montana</td>
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| Site Visit ID Number      | 6227                              |

**NEUROSURGERY**

Three neurosurgeons actively and consistently provide and document care at KRMC. They participate fully in the trauma PI program. Neurosurgical coverage is continuously present. The PI program demonstrates appropriate care of neurotrauma patients at KRMC. There are transfer agreements with appropriate Level I and Level II centers.

<table>
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<th>Survey Dates</th>
<th>March 16-17, 2015</th>
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**ACS Surveyors**

- Phil Caropreso, MD FACS
- David Flurad, MD FACS
Subspecialty Training for Mid-Level Providers

Initial Experience with a Neurosurgical Primary Technical Skills Boot Camp for Physician Assistants and Nurse Practitioners and Evolution into a Mid-level Fellowship training

Changes in health care delivery are precipitating changes in health care delivery team structures both in academic and non-academic practices. This is most acutely seen in the evolution of the use of mid-level physician extenders. Mid-level providers already play an integral role in healthcare delivery in rural and semirural areas mainly in the delivery of primary care. There has been penetration into subspecialty care as the need has arisen exacerbated by changes in resident work hours restrictions, the economics of population health models, and changing methodologies in provider compensation.

The roles of physician assistance have changed dramatically over the past decade as noted by the 219 percent growth in PA-C providers between 2003 and 2013 (43,500 to 95,583). Rapid penetration in academic practice has been required to meet the declining resident work hours. Current PA-C education is significantly oriented to primary care. Most programs are 26 months with one year of basic sciences and one of clinical rotations of core plus electives. No dedicated subspecialty training is required. Currently, PA-C subspecialty fellowships are available in spectrum of medicine/surgical subspecialties. Only one fellowship is currently available that is dedicated to neurological surgery.

Over the past three years we have conducted a mid-level primary skills boot camp modelled after the society of neurological surgeons PGY-1 neurosurgical boot camp (1/2 day case base didactic lectures, 1 full day of procedural simulations) including application of tongs; EVD placement; ICP bolt placement; spinal tap/spinal drain; shunt programming/tapping; DBS programing; pain pump programing; and a cranial skills module. We collected exit course evaluation from all 88 course participants which guided the development of a one year mid-level neurological fellowship curriculum.

The curriculum was focused on building diagnostic, procedural and operative skills. Rotations included neurosurgical clinic; neurosurgical operative assistance for spinal and cranial procedurals; hospital management and emergency procedures (EVD, ICP, LP); and electives in neuroradiology, emergency medicine, pain management, and neuro-rehab and pain management.

Mid-level subspecialty training in neurological surgery is currently significantly underserved. Competition for mid-level providers is acute. Neurological surgery should take an active educational role in the development of subspecialty training of midlevel providers to optimize their performance and recruitment. The course curriculum, fellowship proposal and strategies for funding will be presented.
3rd Annual Neurosurgical Boot-camp for Mid-Level Practitioners

Save THE Date October 1 and 2, 2015

Neuroscience & Spine Institute

Kalispell Regional Healthcare

Neurosurgical Boot-camp for Mid-levels is a two day course:

1) didactic case based lectures and discussions based on the neurosciences neurological patient management

2) a practical hands on skills laboratory simulation, ICP monitor placement, lumbar puncture/drain, EVD placement, shunt integration and tapping, DBS/pain pump simulation, and a cranial skills course

2013-2015 Neurosurgical Boot-camp for Mid-Level Practitioners
19 Attendees-2013; 34 Attendees-2014; 35 Attendees-2015
DR. THOMAS C. ORIGITANO has one of the best office views in the Flathead, with his desk facing a panel of windows showing a dramatic wall of mountains bordering the west side of the valley, freshly dusted with snow in mid-November.

He says the view is medicine for him, and he should know: Origitano is one of the top neurosurgeons in the region, who performed hundreds of brain surgeries in Chicago and has now settled in Kalispell, as a surgeon and medical director at the Neuroscience and Spine Institute.

The institute is capable of handling a broad spectrum of brain and spinal issues, including but not limited to movement disorders, minimally invasive spine surgery, complex spinal deformity surgery, brain tumors, stroke, child neurology, acute and chronic pain, intraoperative surgical navigation, telemedicine, neuromuscular disease, endonasal endoscopic pituitary surgery, cranial and spinal trauma, and advanced functional imaging.

It was the scenery outside his window, and the forward-thinking administration at Kalispell Regional Healthcare, that drew him here.

“The quality of medicine per the population here is outstanding,” Origitano said. “High-quality living is directly related to high-quality health, and high-quality health is directly related to high-quality health care.”

When he was considering moving here to practice, Origitano took into account the leadership at Kalispell Regional, and saw an opportunity to develop advanced and complete health care programs.

The administration is supportive and open to new ideas, he said, which is crucial, especially when funding comes into play.

Such a progressive mindset is attractive for physicians and health-care workers, he said, drawing great oncologists, cardiologists, nurses, physical therapists, and all of the other moving parts needed for comprehensive health care.

“(Kalispell Regional Medical Center) has the gravity to become a referral resource for the rest of the state,” Origitano said.

When he first started at the NSI in 2011, the staff meetings included three people. In November, there were 30 to 40 people gathered for a meeting; in the neurosurgery part of the institute alone, there are five neurosurgeons, three physician assistants, three medical assistants, six front office staff, three billing staff and an office manager.
The practice is growing, in other words, almost exponentially so. Before NSI started up, Origitano said, most of the brain and spinal injuries and surgeries were shipped out of state to larger medical centers.

In three years, the institute has decreased the egress – or neuro and spinal patients having to go elsewhere – by 95 percent.

In fiscal year 2013-2014, staff at the institute facilitated 29,793 patient visits and performed 3,194 diagnostic, interventional and surgical procedures, a 12 percent increase over the previous year. New patient visits grew by 58 percent.

Origitano said there have been 85 brain tumor operations in the last two years, which is considerably less than he was used to performing in Chicago, but will likely increase as more patients and doctors around the state become familiar with the NSI’s capabilities.

The Flathead doesn’t have a university medical center, he said, but the technology used at KRMC is better than that in most places around the country. And since the NSI has begun operations, the staff has developed relationships with regional hospitals.

“Since we have broadened expertise, we’ve also broadened our relationships,” Origitano said.

It will take some time for most Montanans to realize there is such modern brain and spinal care in Kalispell, he said. (Helping to spread the institute’s influence is its teleconferencing program, in which the neurologists can perform consultations with patients across the state while the doctor with the patient performs an examination.)

The future is boundless, he said, as technology and opportunity only improve; Origitano hopes to eventually see a hospitality and education center at KRMC, where families of patients can stay, and the education section can attract medical talent from around the world.

He also hopes to see a simulation center at the hospital, where medical professionals could practice new and old techniques before working on live patients.

Continual development in technology and integrated programs throughout the hospital and NSI will only open the door for better services for the valley, and, as Origitano envisions, the rest of the state.

“When people have dreams and visions, and they are able to turn those dreams into tangible programs, the community benefits,” he said.
Advanced, comprehensive brain and spine care for Montana, in Montana.

Contact the Neuroscience & Spine Institute

Neuroscience & Spine Institute
Department of Neurology
200 Commons Way
Kalispell, MT
(406) 752-5095

Neuroscience & Spine Institute
Department of Neurological Surgery
200 Commons Way
Kalispell, MT
(406) 752-5170

Neuroscience & Spine Institute
Physical Medicine & Rehabilitation
200 Commons Way
Kalispell, MT
(406) 758-7035

Montana Center for Wellness & Pain Management
245 Windward Way
Kalispell, MT
(406) 756-8488

Inpatient Rehabilitation at The HealthCenter
320 Sunnyview Lane
Kalispell, MT
(406) 756-4720
Kalispell Regional Healthcare Services (located in numbered buildings)

1. Kalispell Regional Medical Center (KRMC)
   - 310 Sunnyview Lane | 752-5111
   - KRMC Outpatient Infusion
   - KRMC Wound, Ostomy and Hyperbaric Center
   - KRMC Birthing Center

2. Brendan House | 751-6500
   - Geriatrics and Supportive Care | 751-6500
   - 350 Commons Way

3. KRMC Breast Center
   - 310 Sunnyview Lane | 751-6488

4. The HealthCenter
   - 4a • The Women’s Center | 751-5710
   - 4b • The Imaging Center | 751-9720
   - 4c • The Surgery Center | 751-7650
   - 320 Sunnyview Lane

5. KRH RV Parking
6. Northwest Montana Radiation Oncology
   - 343 Sunnyview Lane | 752-1790

7. The Rock Medical Office Building
   - 350 Heritage Way
   - Rocky Mountain Heart & Lung (Cardiology, Pulmonology, Cardiac Surgery, Sleep Medicine) | 257-9892
   - Northwest Orthopedics & Sports Medicine | 752-6874
   - Northwest Oncology & Hematology | 752-5800

8. The Montana Center for Wellness and Pain Management
   - 245 Windward Way | 752-8488

9. Pathways Treatment Center
   - 200 Heritage Way | 756-5950

10. KRMC Outpatient Rehabilitation
    - 205 Sunnyview Lane | 751-4520

11. The Summit Medical Fitness Center
    - 205 Sunnyview Lane

12. FamilyBorn Maternity and Women’s Health
    - Flathead Valley Women’s Center | 752-0303
    - Montana Perinatal Center | 257-3872
    - Gina Nelson, MD | 755-6550
    - 210 Sunnyview Lane

13. The Clinical Pharmacy
    - 202 Commons Drive | 753-7600

14. Occupational Health Services
    - 202 Commons Drive

15. Kalispell Medical Offices and Bone Health
    - 1280 Burns Way | 753-5266

16. Big Sky Family Medicine
    - 1287 Burns Way | 752-8433
    - KRMC Patient Accounts (Patient Billing) | 756-4408

17. Dino-Sore/Kid Kare
    - 1250 Burns Way | 752-8433

18. Northwest Family Medicine
    - 1250 Burns Way | 752-8433

19. Family Health Care
    - 1287 Burns Way | 752-8433

20. Kalispell Gastroenterology
    - 752-7441
    - Northwest Women’s Healthcare
    - The Newman Center | 758-5155
    - 75 Claremont Street

21. KRMC ALERT Hangar

22. KRMC Emergency Services

23. Neuroscience & Spine Institute
    - 200 Commons Way
    - Department of Neurology | 752-5095
    - Department of Neurological Surgery | 752-5170
    - Department of Physical Medicine & Rehabilitation | 758-7035

24. Kalispell Regional Healthcare Surgical Specialists
    - 1273 Burns Way | 752-8900
    - Northwest Montana Surgical Associates | 752-5000
    - 1333 Surgical Services Drive

25. Sunny View Pediatrics
    - 1273 Burns Way | 752-8900

26. Pediatric Endocrinology & Diabetes Center
    - 350 Heritage Way
    - Northwest Specialists | 752-5392
    - Northwest Montana Surgical Associates | 752-5000
    - 1333 Surgical Services Drive

27. Greater Flathead Renal
    - 135 Commons Way | 752-7406

Rev. 11/2015